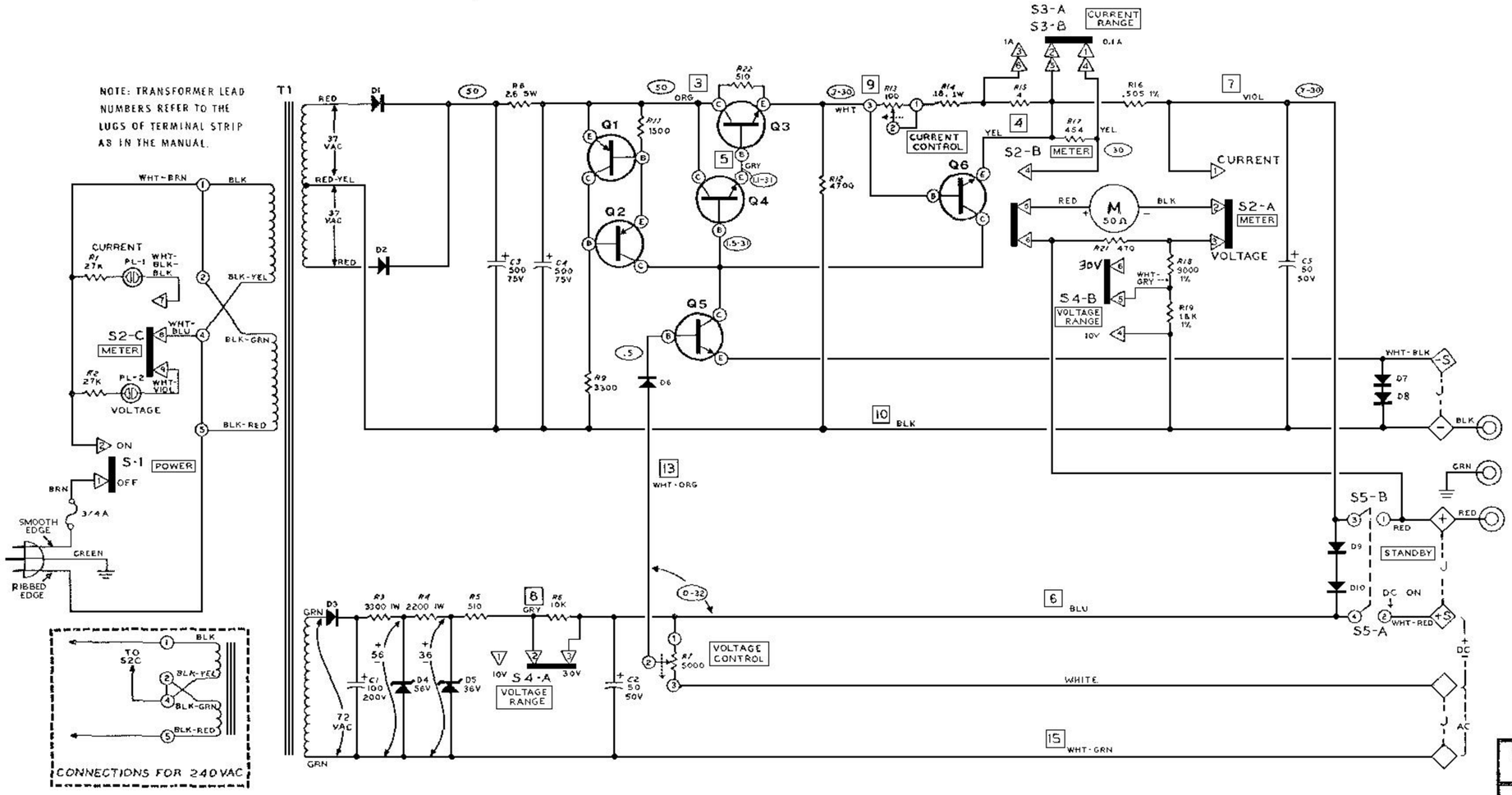
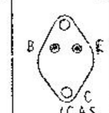
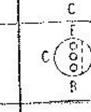



| SWITCH | SHOWN IN POSITION |
|---|---|
| S1 | OFF |
| S2 | VOLTAGE |
| S3 | 0.1A |
| S4 | 10V |
| S5 | STANDBY |

| PART NO. | COMPONENT | MAY BE REPLACED WITH | BASE DIAGRAM |
|---|---|---|---|
| 417-201 | Q1, Q2 | 2N3906 |  |
| 417-162 | Q3 | 2N3055 |  |
| 417-109 | Q4 | 2N3566 |  |
| 417-94 | Q5, Q6 | 2N3416 |  |
| 57-27 | D1, D2, D3, D7, D8, D9, D10 | SILICON, 600 PIV, 1A | |
| 56-13 | D4 | 56 V ZENER, 1W | |
| 56-55 | D5 | 36 V ZENER 1W | |
| 56-26 | D6 | 1N191 | |

SCHEMATIC OF THE HEATHKIT®

1-30V DC REGULATED POWER SUPPLY MODEL 1P-28

NOTES:

1. RESISTOR VALUES ARE IN OHMS (K=1,000). RESISTORS ARE 1/2 WATT UNLESS OTHERWISE MARKED.
2. CAPACITOR VALUES ARE IN MICROFARADS (μF). CAPACITOR WORKING VOLTAGES ARE INDICATED.
3. THE CROSS ARROW ↕ ON A CONTROL ARM SYMBOL INDICATES CLOCKWISE ROTATION OF CONTROL.
4. a. DC VOLTAGE MEASUREMENTS TAKEN WITH A HIGH IMPEDANCE VOLTMETER. VOLTAGES MAY VARY ±10%.
   b. ALL VOLTAGES WERE MEASURED WITH:
      (1) NO LOAD ON THE OUTPUT TERMINALS AND 115 VAC, 60Hz, ON THE POWER TRANSFORMER PRIMARY.
      (2) THE VOLTAGE CONTROL AND THE CURRENT CONTROL FULLY CLOCKWISE AND THE VOLTAGE RANGE SWITCH IN THE 30V POSITION.
   c. WHERE TWO VOLTAGES ARE SHOWN, THE CIRCUIT VOLTAGE DEPENDS UPON THE SETTINGS OF THE VOLTAGE RANGE SWITCH (S-4) AND THE VOLTAGE CONTROL (R7).
5. **S/N 09317 HAS A 200 PF DISK CERAMIC CAPACITOR FROM Q6 COLLECTOR TO GND (BLACK BINDING POST).**

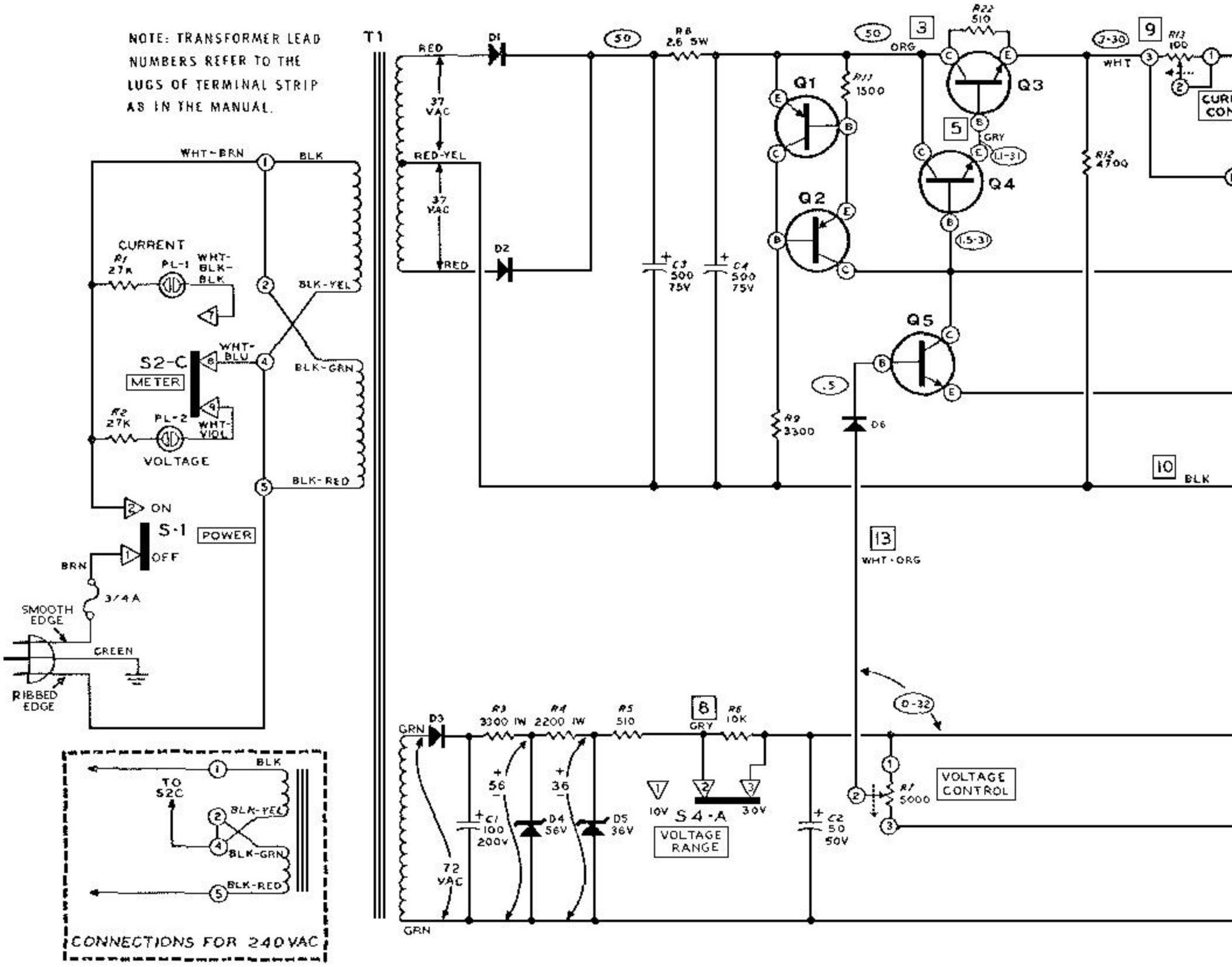
SPECIAL SYMBOLS

(Numbers of letters within symbol outlines will vary.)

- (2) SLIDE SWITCH TERMINAL
- [3] CIRCUIT BOARD NUMBERED HOLES
- (C) TRANSISTOR TERMINAL
- (1) CONTROL OR SWITCH TERMINAL
- ◇+ REAR APRON TERMINAL STRIP
- ◯ PANEL BINDING POST
- (12) DC VOLTAGE FROM POINT SHOWN TO BLACK BINDING POST.
- J JUMPER CONNECTION ON REAR APRON

# SCHEMATIC OF THE HEATHKIT®

# 1-30V DC REGULATED POWER SUPPLY MODEL IP-28




NOTES:

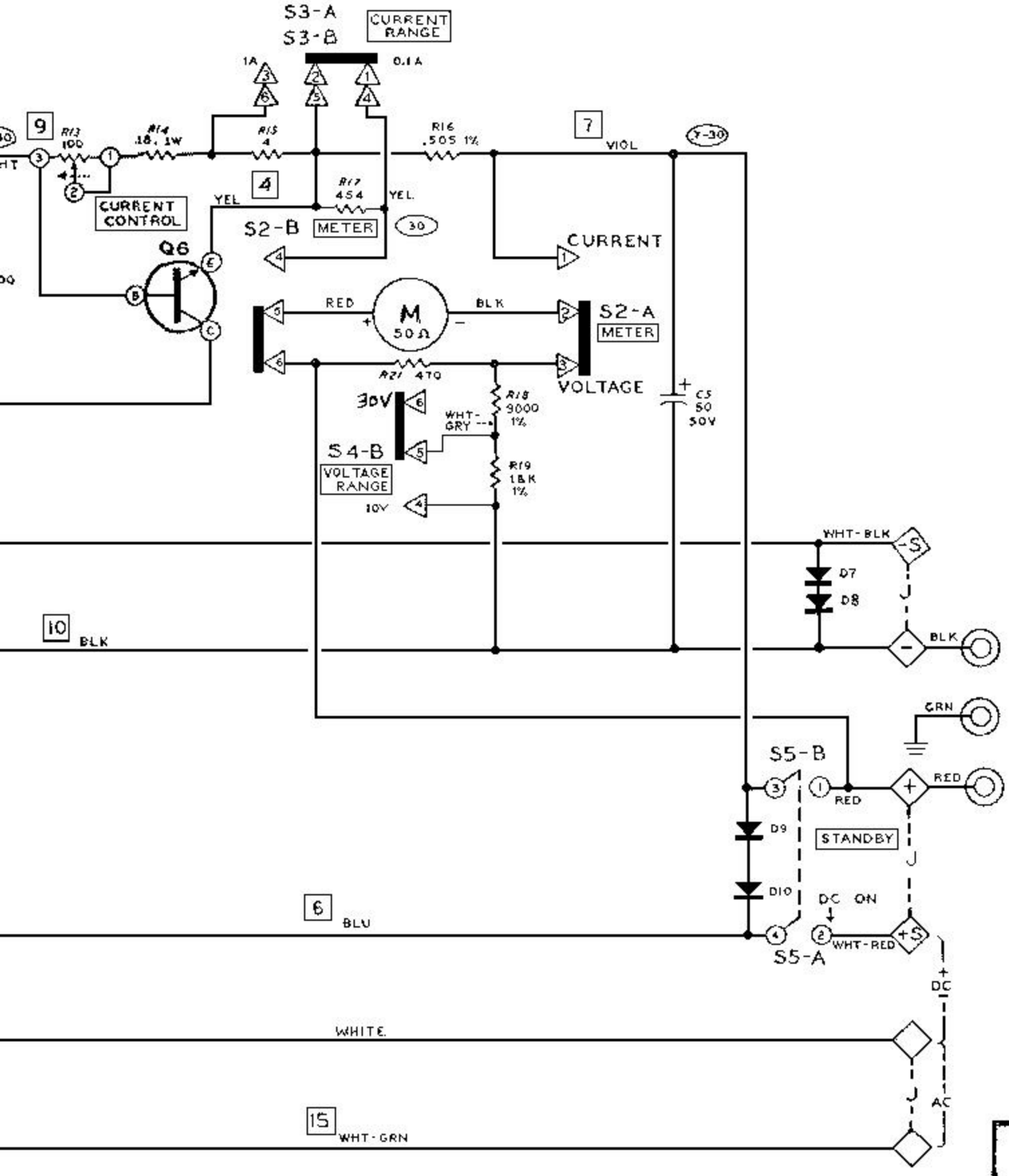
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2. CAPACITOR VALUES ARE IN MICROFARADS (μF). CAPACITOR WORKING VOLTAGES ARE INDICATED.

3. THE CROSS ARROW  ON A CONTROL ARM SYMBOL INDICATES CLOCKW ROTATION OF CONTROL.

4. a. DC VOLTAGE MEASUREMENTS TAKEN WITH A HIGH IMPEDANCE VOLTME VOLTAGES MAY VARY ±10%.
   b. ALL VOLTAGES WERE MEASURED WITH:
      (1) NO LOAD ON THE OUTPUT TERMINALS AND 115 VAC, 60Hz, ON THE POWER TRANSFORMER PRIMARY.
      (2) THE VOLTAGE CONTROL AND THE CURRENT CONTROL FULLY CLOCKW AND THE VOLTAGE RANGE SWITCH IN THE 30V POSITION.
   c. WHERE TWO VOLTAGES ARE SHOWN, THE CIRCUIT VOLTAGE DEPENDS UPON THE SETTINGS OF THE VOLTAGE RANGE SWITCH (S-4) AND THE VOLTAGE CONTROL (R7).

5. S/N 09317 HAS A 200 PF DISK CERAMIC CAPACITOR FROM Q6 COLLECTOR TO GN (BLACK BINDING POST).




2 WATT UNLESS

WORKING

TES CLOCKWISE

ANCE VOLTMETER,

0Hz, ON THE

ULLY CLOCKWISE
ON.
GE DEPENDS
) AND THE

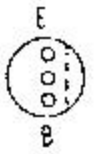
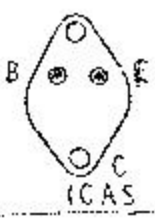
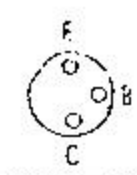
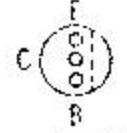
LECTOR TO GND

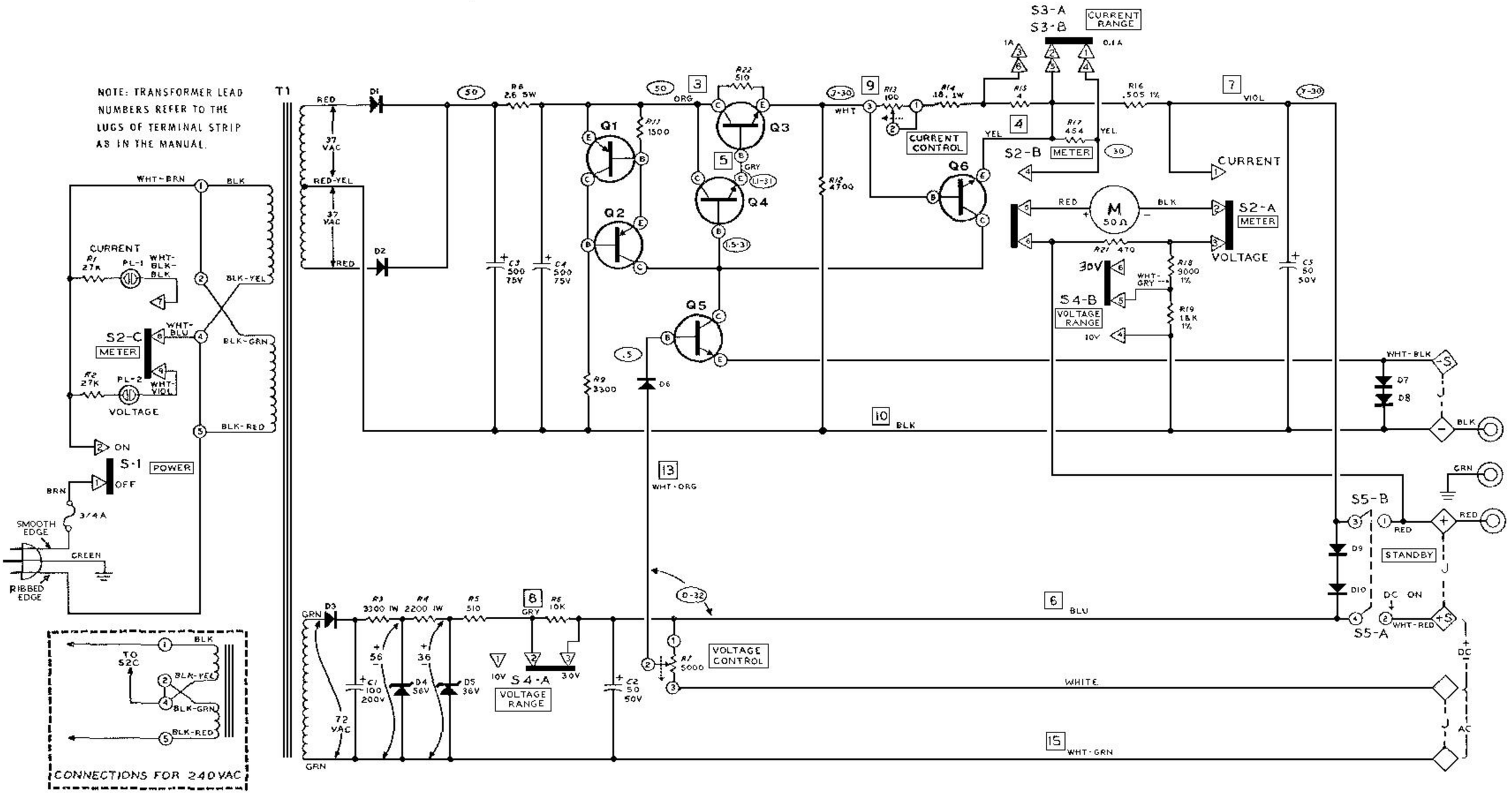
SPECIAL SYMBOLS

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| SWITCH | SHOWN IN POSITION |
|---|---|
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| PART NO. | COMPONENT | MAY BE REPLACED WITH | BASE DIAGRAM |
|---|---|---|---|
| 417-201 | Q1, Q2 | 2N3906 |  |
| 417-162 | Q3 | 2N3055 |  |
| 417-109 | Q4 | 2N3566 |  |
| 417-94 | Q5, Q6 | 2N3416 |  |
| 57-21 | D1, D2, D3, D7, D8, D9, D10 | SILICON, 600 PIV, 1A | |
| 56-13 | D4 | 56 V ZENER, 1W | |
| 56-55 | D5 | 36 V ZENER 1W | |
| 56-26 | D6 | 1N191 | |


NOTE: TRANSFORMER LEAD NUMBERS REFER TO THE LUGS OF TERMINAL STRIP AS IN THE MANUAL.
T1
RED
37 VAC
RED-YEL
37 VAC
RED
D1
D2
50
R8 2.6 5W
C3 500 75V
C4 500 75V
Q1
Q2
R11 1500
R9 3300
50
ORG
3
R22 510
Q3
5
GRY
LI-31
Q4
1.5-31
.5
Q5
D6
J-30
WHT
9
R12 4700
R13 100
R14 .18, 1W
CURRENT CONTROL
Q6
S3-A
S3-B
CURRENT RANGE
1A
0.1A
R15 4
4
R17 454
YEL
S2-B
METER
30
R16 .505 1%
7
VIOL
Y-30
CURRENT
RED
M
50Ω
BLK
S2-A
METER
VOLTAGE
R21 470
30V
R18 3000 1%
WHT-GRY
S4-B
VOLTAGE RANGE
10V
R19 1.8K 1%
C5 50 50V
10
BLK
WHT-BLK
-S
D7
D8
BLK
GRN
S5-B
RED
+
RED
STANDBY
D9
D10
DC ON
WHT-RED
+S
S5-A
J
+ DC -
AC
13
WHT-ORG
0-32
6
BLU
WHITE
15
WHT-GRN
GRN
D3
R3 3300 1W
R4 2200 1W
R5 510
8
R6 10K
GRY
+ 56 - C1 100 200V
+ 36 -
D4 56V
D5 36V
10V
S4-A
VOLTAGE RANGE
30V
C2 50 50V
72 VAC
GRN
R1 5000
VOLTAGE CONTROL
WHT-BRN
BLK
CURRENT
R1 27K
PL-1
WHT-BLK-BLK
BLK-YEL
S2-C
METER
WHT-BLU
BLK-GRN
R2 27K
PL-2
WHT-VIOL
VOLTAGE
BLK-RED
ON
S-1
POWER
OFF
BRN
3/4A
SMOOTH EDGE
GREEN
RIBBED EDGE
BLK
TO S2C
BLK-YEL
BLK-GRN
BLK-RED
CONNECTIONS FOR 240 VAC